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Remarks

It is observed that the Examiner rejected claims 1-7 as failing to comply with the enablement requirement.

The Examiner also rejected claims 1-7 as being unpatentable over Schmodde in view of Kamen.

According to the Examiner, Schommde discloses all of the features of pending claim 1 but the feature that comparator means are present to compare the gram force signal with a reference signal in order to obtain a gram force error signal and consequently the feature that the control unit is adapted to drive the supply means of the power supply means of the motor according only to the gram force error signal of the thread and to a signal that is the derivative with respect to time of the gram force signal emitted by the gram force sensor means.

According to the Examiner Kamen discloses such features when illustrating a conventional PID controller.

The applicant has amended claim 1 to overcome the rejection under 35 U.S.C. 112.

It is observed that, as correctly indicated by the Examiner, the applicant is inputting both of the two signals, i.e. the gram force error signal and its derivative.

The wording "only" has been inserted with the aim of putting in evidence the fact that in the applicant's invention only one signal and its derivative are used, contrary to the prior art.

The fact that the derivative signal is used means that always one signal is needed, since the derivative signal is derived from the gram force signal

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like the gram error force signal. Thus, no speed signal or other predicting signal carrying information about the future behavior of the knitting machine are needed.

However, the applicant has amended claim 1 since it is recognized that the previous wording could generate confusion about the number of signals effectively used.

In view of the above, the applicant has amended claim 1 to recite that
".....according only to a pair of signals, that is the gram force error signal of said thread and a signal that is the derivative with respect to time of the gram force signal emitted by said gram force sensor means".

Claim 5 has been accordingly amended, deleting the wording "only".
As far as the Examiner's rejections under 35 U.S.C. 103, the applicant respectfully disagrees with the Examiner's opinion since on one hand it is true that Schmodde does not disclose feature that comparator means are present to compare the gram force signal with a reference signal in order to obtain a gram force error signal and consequently the feature that the control unit is adapted to drive the supply means of the power supply means of the motor according only to the gram force error signal of the thread and to a signal that is the derivative with respect to time of the gram force signal emitted by the gram force sensor means.

Before commenting the Kamen reference the applicant wishes to clarify an issue that is extremely important with respect to the understanding of pending claim 1.

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The applicant's claimed invention uses two signals (in reality only one signal and its derivative, the derivative being a direct consequence of having the "main" signal". Thus it can surely be said that only one signal is used), the gram force signal (8) and its derivative with respect to time, i.e. the signal (12).

In no way the applicant uses or calculates the derivative of the error as it would occur in a conventional PID controller.

Thus, the combination of Schmodde with Kamen would not lead the skilled man in the art to the invention as disclosed in claim 1.

In fact, Kamen discloses, for example in figure 4.6, a signal $r(t)$ and its derivative $r'(t)$, wherein $r(t)$ is a reference signal.

Kamen then uses the derivative of the controlled signal, i.e. $\theta'(t)$ that could be considered as being the same as the applicant derivative of the gram force signal, i.e. applicant's signal (12).

However, Kamen at this point compares $\theta'(t)$ with $r'(t)$, i.e., compares the derivative of the controlled signal with the derivative of the reference signal.

This is not the case with the applicant's claimed invention wherein no comparison with the "derivative of the error" is performed. Figure 2 of the present application is quite explicative in this regard.

Thus, conventional PID scheme is not the core of the applicant's invention, but it is only one of the allowable means used to by the control unit to

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drive the power supply means. In other words, the control unit is characterized in that it uses only the gram force signal in the form of its error and its time derivative (in particular the sign of the derivative) to decide what kind of control is necessary to apply to the power supply means of the motor.

In view of the above, it is strongly believed that the amended claim 1 is both new and unobvious over the cited prior art documents.

In the same way, method claim 5 has been amended along the same line of claim 1 and such method claim 5 should also be considered as being allowable.

It will be noted that a sincere effort has been made to positively respond to all of the points raised by the Examiner.

The application is thus believed to be in an allowable condition.

While it is believed that the amended claims properly define the present invention, applicant would be open to any suggestion the Examiner may have concerning different claim phraseology which, in the Examiner's opinion, more accurately defines the present invention.

Respectfully submitted,


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